Please amend the claims as follows:

1. (Currently amended) Apparatus for testing the phase linearity of a network, the apparatus including a first device for producing test signals spaced at known frequency intervals and with predictable phase relationships and a second device for receiving the signals, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining the phase linearity from the comparison, the first and second devices being adapted for coupling to the network, at least one of the first and second devices being further adapted for determining the amplitudes of the received test signals and for comparing the amplitudes of the received test signals to each other to determine variation of the amplitude of the frequency response characteristic across the frequencies contained in the test signals.

2. (Original) The apparatus of claim 1 wherein the first device is capable of producing a first test signal having a first center frequency, first lower frequency spectral components, and first higher frequency spectral components, and the second device is capable of determining phase relationships for multiple spectral components of the first test signal.

3. (Original) The apparatus of claim 2 wherein the first device is capable of producing a second test signal having a second center frequency, second lower frequency spectral components, and second higher frequency spectral components, and the second device being capable of determining phase relationships for multiple spectral components of the second test signal.

4. (Original) The apparatus of claim 3 wherein the second device is capable of comparing phase relationships among multiple frequency components of the first and second test signals to determine the phase linearity of the network.

5. (Previously presented) The apparatus of claim 1 wherein the first device includes a generator for generating at least one of a frequency modulation (FM) signal, an amplitude modulation (AM) signal and a phase modulation (PM) signal, and the second device is capable of tuning across a range of frequencies produced by the generator and processing information from the tuned frequencies.

6. (Currently amended) The apparatus of claim 1 wherein the first device includes a first digital signal processor (DSP).

7. (Previously presented) The apparatus of claim 1 wherein the first device includes a direct digital synthesizer (DDS).

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8.   (Currently amended) The apparatus of claim 1 wherein the first device includes a ~~first~~ local oscillator, a ~~first~~ mixer coupled to receive an output of ~~the first mixer~~ the local oscillator, and a ~~first~~ filter coupled to receive an output of the ~~first~~ mixer.

9.   (Currently amended) The apparatus of claim 1 wherein the second device includes a ~~second~~ mixer for mixing the received test signal, and a ~~second~~ filter coupled to the second mixer.

10.   (Currently amended) The apparatus of claim 9 wherein the second device further includes a digital signal processor (DSP) capable of fast Fourier transforming (FFTing) a signal related to the output of the ~~second~~ filter to produce a signal related to the determined phase relationship.

11.   (Currently amended) The apparatus of claim 9 wherein the ~~second~~ filter includes a bandpass filter having a center frequency substantially equal to a center frequency of the test signals and a sufficiently narrow bandwidth to reject frequencies lower than lower frequency components of the test signals and higher than higher frequency components of the test signals.

12.   (Previously presented) The apparatus of claim 1 wherein the second device is capable of employing a Bessel function to perform at least one of receiving the signals, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining the phase linearity from the comparison.

13.   (Original) The apparatus of claim 12 wherein the second device includes a table containing values of the Bessel function for use in evaluating the Bessel function.

14.   (Previously presented) The apparatus of claim 1 wherein at least one of the first and second devices includes a device for producing a signal for synchronizing the transmission by the first device and reception by the second device of the test signals.

15.   (Original) The apparatus of claim 14 wherein the first and second devices include information concerning the test frequencies, the synchronizing signals causing the first and second devices to transmit and receive multiple test frequencies in an established sequence.

16.   (Previously presented) The apparatus of claim 14 wherein said one of the first and second devices includes a device for transmitting the synchronizing signal on the network.

17.   (Previously presented) The apparatus of claim 1 wherein at least one of the first and second devices is further adapted for transmitting information related to the determined phase relationships through the network to at least the other of the first and second devices.

18.   (Original) The apparatus of claim 17 wherein the at least one of the first and second devices adapted for transmitting information related to the determined phase relationships through the network is adapted for transmitting the information through a network channel dedicated to the transmission of the information.

19.   (Original) The apparatus of claim 18 wherein the at least one of the first and second devices adapted for transmitting the information through a network channel dedicated to the transmission of the information includes a device adapted for transmitting the information by frequency shift keying (FSK).

20.   (Original) The apparatus of claim 17 wherein at least one of the first and second devices is further adapted for producing a signal for synchronizing the transmission by the first device and reception by the second device of the test signals, the information related to the determined phase relationships being transmitted in the same channel as the synchronizing signal.

21-22. (Cancelled)

23.   (Currently amended) ~~The apparatus of claim 21 wherein~~ Apparatus for testing the phase linearity of a network, the apparatus including a first device for producing test signals spaced at known frequency intervals and with predictable phase relationships and a second device for receiving the signals, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining the phase linearity from the comparison, the first and second devices being adapted for coupling to the network, at least one of the first and second devices being further adapted for determining the amplitudes of the received test signals, the at least one of the first and second devices adapted for determining the amplitudes of the received test signals ~~is~~ being further adapted for comparing the amplitudes of the received test signals to the amplitudes of the transmitted test signals.

24.   (Original) The apparatus of claim 23 wherein the other of the at least one of the first and second devices is further adapted for transmitting an indication of the amplitudes of the transmitted test signals.

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25.   (Previously presented) The apparatus of claim 1 wherein the second device further includes a user interface for displaying an output related to the determined phase relationship.

26.   (Currently amended) A method for testing the phase linearity of a network, the method including producing on the network test signals spaced at known frequency intervals and with predictable phase relationships, receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, ~~and~~ determining from the comparison the phase linearity of the network, determining the amplitudes of the received test signals, and comparing the amplitudes of the received test signals to each other to determine variation of the amplitude of the frequency response characteristic across the frequencies contained in the test signals.

27.   (Original) The method of claim 26 wherein producing on the network test signals spaced at known frequency intervals and with predictable phase relationships includes producing a first test signal having a first center frequency, first lower frequency spectral components, and first higher frequency spectral components, and receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network includes determining phase relationships for multiple spectral components of the first test signal.

28.   (Original) The method of claim 27 wherein producing on the network test signals spaced at known frequency intervals and with predictable phase relationships includes producing a second test signal having a second center frequency, second lower frequency spectral components, and second higher frequency spectral components, and receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network includes determining phase relationships for multiple spectral components of the second test signal.

29.   (Original) The apparatus of claim 28 wherein the second device is capable of comparing phase relationships among multiple frequency components of the first and second test signals to determine the phase linearity of the network.

30.   (Currently amended) The method of claim 26 wherein producing on the network test signals spaced at known frequency intervals and with predictable phase relationships includes generating at least one of a frequency modulation (FM) signal, an

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amplitude modulation (AM) signal and a phase modulation (PM) signal, and receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network include tuning across a range of frequencies and processing information from the tuned frequencies.

31.　　(Currently amended)　The method of claim 26 wherein producing on the network test signals spaced at known frequency intervals and with predictable phase relationships includes producing on the network with a ~~first~~ digital signal processor (DSP) test signals spaced at known frequency intervals and with predictable phase relationships.

32.　　(Previously presented)　The method of claim 26 wherein producing on the network test signals spaced at known frequency intervals and with predictable phase relationships includes producing on the network with a direct digital synthesizer (DDS) test signals spaced at known frequency intervals and with predictable phase relationships.

33.　　(Currently amended)　The method of claim 26 wherein producing on the network test signals spaced at known frequency intervals and with predictable phase relationships includes producing on the network using a ~~first~~ local oscillator, a ~~first~~ mixer coupled to receive an output of the ~~first~~ local oscillator, and a ~~first~~ filter coupled to receive an output of the ~~first~~ mixer test signals spaced at known frequency intervals and with predictable phase relationships.

34.　　(Currently amended)　The method of claim 26 wherein receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network includes receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network using a ~~second~~ mixer for mixing the received test signal, and a ~~second~~ filter coupled to the ~~second~~ mixer.

35.　　(Currently amended)　The method of claim ~~26~~ 34 wherein receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network includes receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network using a digital signal processor (DSP)

capable of fast Fourier transforming (FFTing) a signal related to the output of the ~~second~~ filter to produce a signal related to the determined phase relationship.

36.   (Currently amended) The method of claim ~~26~~ 34 wherein using a filter includes using a bandpass filter having a center frequency substantially equal to a center frequency of the test signals and a sufficiently narrow bandwidth to reject frequencies lower than lower frequency components of the test signals and higher than higher frequency components of the test signals.

37.   (Previously presented) The method of claim 26 wherein receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining from the comparison the phase linearity of the network includes employing a Bessel function to perform at least one of receiving the signals, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, and determining the phase linearity from the comparison.

38.   (Original) The method of claim 37 wherein employing a Bessel function includes employing a table containing values of the Bessel function for use in evaluating the Bessel function.

39.   (Previously presented) The method of claim 26 further including producing with one of the first and second devices a signal for synchronizing the transmission by the first device and reception by the second device of the test signals.

40.   (Original) The method of claim 39 further including providing in the first and second devices information concerning the test frequencies to cause the first and second devices to transmit and receive multiple test frequencies in an established sequence.

41.   (Original) The method of claim 39 including transmitting the synchronizing signal on the network.

42.   (Previously presented) The method of claim 26 further including transmitting information related to the determined phase relationships through the network from one of the first and second devices to the other of the first and second devices.

43.   (Original) The method of claim 42 wherein transmitting information related to the determined phase relationships through the network from one of the first and second devices to the other of the first and second devices includes transmitting the information through a network channel dedicated to the transmission of the information.

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44.   (Original) The method of claim 43 wherein transmitting the information through a network channel dedicated to the transmission of the information includes transmitting the information by frequency shift keying (FSK).

45.   (Original) The method of claim 42 further including producing with one of the first and second devices a signal for synchronizing the transmission by the first device and reception by the second device of the test signals, transmitting information related to the determined phase relationships through the network including transmitting the information related to the determined phase relationships in the same channel as the synchronizing signal.

46-47. (Cancelled)

48.   (Amended) ~~The method of claim 46 further including~~ A method for testing the phase linearity of a network, the method including producing on the network test signals spaced at known frequency intervals and with predictable phase relationships, receiving the signals from the network, determining their phase relationships, comparing the determined phase relationships to expected phase relationships among the signals, determining from the comparison the phase linearity of the network, determining the amplitudes of the received test signals, and comparing the amplitudes of the received test signals to the amplitudes of the transmitted test signals.

49.   (Original) The method of claim 48 further including transmitting an indication of the amplitudes of the transmitted test signals.

50.   (Previously presented) The method of claim 26 further including displaying an output related to the determined phase relationship.

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